

EXPERIMENTAL EVALUATION OF AN INSTRUCTIONAL UNIT
ON AGRICULTURAL BANKING AND SOURCES OF FARM CREDIT

by

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CHAPTER I

INTRODUCTION

The use of instructional aids in education is nearly as old as teaching itself. Aids have undergone changes in the past, progressing from sketches on rock walls to diagrams on schoolroom chalkboards. Recent technological innovations have created a need for fast-paced, flexible teaching materials to supplement instruction provided through films, projections and microcomputers.

Vocational agriculture teachers tend to rely heavily on prepared teaching aids due to the increasingly technical nature of the subject matter with which they deal. As a result of this dependence, much of the material is utilized in the classroom without first having determined its usefulness. Selection of quality instructional materials for use by vocational agriculture teachers has been a difficult problem.

As a result of the Vocational Education Act of 1963 (16), programs in secondary schools have been characterized by expanded content areas. Geesey (5) noted that as a consequence, it is becoming more important that students and teachers have proper access to these instructional materials. Vocational agriculture teachers depend on instructional materials as teaching aids in subject matter outside their particular areas of expertise and for presenting their lessons in a more interesting format. Many teachers have assumed the responsibility of developing their own instructional materials. However, this is a time-consuming task; therefore reducing the amount of time available to devote to other areas of the program.

Instructional materials have been developed in a variety of content areas to serve many purposes. Games are being used more in the classroom, but seldom do they offer more than creation of short term interest. Other materials such as movies, slide sets and filmstrips are effectively used to introduce new or technical information. Vocational agriculture teachers support the educational philosophy of experimental learning and as a group have been willing users of materials requiring students to solve problems. Use of these materials promotes student reasoning skills and judgement abilities unlike requirements of techniques requiring little or no problem-solving ability.

Vocational agriculture teachers must be able to identify and select instructional materials which will serve as aids by providing student experiences through which desired learning outcomes occur. Teachers are often unable to assess instructional materials quality due to time and money constraints as well as a lack of expertise. However, evaluation of instructional materials is a vital activity and an important responsibility which must not be overlooked.

Ridenour (19) suggests that evaluations be conducted to determine the effect of particular materials on the teaching-learning process. He further emphasized that materials which improve efficiency and overall effectiveness should replace materials which prove to be less efficient or effective. Such evaluations should give consideration not only to the effect on student learning, but also to the ways in which the material affects the teacher's ability to provide quality instruction in the classroom.

More recently, Gliem (6) suggested expanding curriculum evaluation to include changes in student attitudes and competencies. Knowledge alone is no longer viewed as the sole criterion for evaluation. This broadened

view of instructional material evaluation indicates the need for a more structured, empirically tested process to lend support and direction in the development of new curriculum materials.

Background of the Study

During recent years, the area commonly referred to as agri-business has received more attention from agricultural educators as a viable alternative to the more traditional instructional areas of production and mechanics. Indeed, with poor management forcing a record number of farmers from their chosen occupation, the need to better prepare vocational agriculture students in this particular area becomes more evident.

In the state of Kansas, records from the State Department of Education seem to indicate that limited work has been done in the development of new curriculum materials pertaining to agricultural banking and finance. Since the initial development of the Kansas Vocational Agriculture Basic Core, few teachers have taken it upon themselves to expand into this content area. At the present time, there is a shortage of comprehensive instructional material for use in secondary classrooms.

From August 1983 to January 1984, the researcher cooperated with agricultural instructors, businessmen, and extension personnel in identifying specific areas in need of additional curriculum development and instruction. The unit tested in this study is a direct result of this collaboration.

The Study

Purpose

The primary purpose of this investigation was to experimentally test the effectiveness of an instructional unit concerning agricultural banking as it relates to student level of knowledge and attitude.

Objectives

Objectives identified for the research study were:

1. To determine the effectiveness of an Agricultural Banking and Sources of Farm Credit instructional unit as evaluated by student knowledge and attitude scores.
2. To determine the effectiveness of an Agricultural Banking and Sources of Farm Credit instructional unit in relation to traditional instructional materials.
3. To identify relationships which may exist between student and instructor's personal or school situational characteristics and student achievement or attitude toward Agricultural Banking and Sources of Farm Credit.
4. To identify instructor concerns regarding the quality and value of an Agricultural Banking and Sources of Farm Credit instructional unit.

Hypotheses

It was hypothesized that students receiving classroom training from instructors who had access to the developed unit would have greater knowledge in the basic principles of Agricultural Banking and Sources of Farm Credit than those students whose instructor was without access to the prepared unit.

It was further hypothesized that:

1. Students receiving prepared unit instruction would score higher on an achievement test in basic agricultural banking skills than students receiving traditional instruction.
2. Students receiving prepared unit instruction would score higher on an attitude inventory battery dealing with agricultural banking than students receiving traditional instruction.

Significance of the Study

This study helps answer questions regarding the development, evaluation and dissemination of curriculum materials. In addition, the results of this research may indicate whether or not new instructional material is needed in this particular area.

It is hoped that through the development and testing of this particular unit, a means for further improvement in the availability of quality instructional material concerning agricultural finance will emerge.

Authors of curriculum materials developed subsequent to this study should take it upon themselves to follow through with a complete testing procedure as well as providing the results to potential users. In addition to focusing on how these materials affect student growth and development (i.e., knowledge, attitudes, and skills), testing must also determine the impact on instructors as they use the new materials.

Definition of Terms

Terms found throughout the text have meanings that appear to be unique to this investigation. Definitions are provided to avoid possible misunderstandings concerning how these terms were used and applied in this investigation.

Achievement Examination -- a 99 point test containing nine multiple-choice questions each containing four possible choices covering basic agricultural banking concepts (see Appendix J).

Agricultural Banking and Sources of Farm Credit -- subject matter which has been taught in Kansas vocational agriculture classes concerning principles of structure, banking and farm credit system.

Attitude Inventory -- a six question battery covering concepts basic to the experimental unit (see Appendix J).

Experimental Learning -- method of instruction involving problem-solving techniques.

Instructional Unit -- a set of printed materials outlining subject matter and suggesting an approach to teaching (see Appendices E, F, and G).

Instructors -- Kansas State University vocational agriculture student teachers participating in this experiment.

Kansas Vocational Agriculture Basic Core -- the basic core of instructional materials for programs of vocational agriculture in Kansas.

School -- secondary schools in Kansas in which the experiment was conducted.

Students -- Kansas vocational agriculture students participating in this experiment.

Teachers -- secondary education vocational agriculture instructors and cooperating teachers.

Traditional Instruction -- students learning concepts of agricultural banking from instructors who do not have access to the prepared unit. No formal training or printed material were available to this group.

Limitations

The following limitations with regard to validity exist within the study:

1. Use of a non-standardized achievement test threatened internal validity.

2. Events beyond the control of the researcher may have affected student attendance during instruction and/or subsequent testing.
3. Vocational agriculture programs selected for use in this investigation were not so unique that findings could be replicated throughout other programs in the state of Kansas. However, certain situational differences may exist.

CHAPTER II

REVIEW OF LITERATURE

Presented in the following chapter is a review of literature and research relating to this investigation. Extensive work has been conducted in the areas of curriculum materials planning and development, evaluation, and distribution. This chapter will serve as an overview of the most pertinent research in the category of experimental evaluation.

The online computer retrieval service at Kansas State University was utilized to gather useful information for the investigation. The Educational Resources Information Center (ERIC) database formed the nucleus of the search. Also used in the overview were the Abstracts of Instructional and Research materials in Vocational and Technical Education (AIM/ARM), Research in Education (RIE), and Dissertation Abstracts International (DAI). The review contained in this chapter will be divided into the following categories:

1. Theoretical Framework
2. Development
3. Evaluation and Distribution

Results obtained from experimental research will be emphasized as these types of studies provide the most rigorous means of establishing true cause and effect relationships among variables as indicated by Campbell and Stanley (3 p. 4).

Theoretical Framework

Agriculture is an industry characterized by constant change. Community and student needs change likewise and educational programs must undergo adjustments to meet those needs. Curriculum materials must therefore be monitored and modified in order to produce desirable learning outcomes. Agricultural educators are responsible for providing their students with information necessary for them to function as effective consumers of products and/or workers in agricultural industries.

The problem of keeping abreast of changing agricultural technology was noted by Jacks in 1970 (11 p. 55):

To effectively train today's agriculturalists, the vocational agriculture teacher must know the animal and plant sciences; the mechanical and economic aspects of farming; and the occupational requirements of non-farm ag-related pursuits.

Prepared curriculum materials, if properly developed, can aid instructors by providing the latest technical information in agriculture. Kelly (13 p. 21) identified other factors affecting education which undergo change as does agriculture and therefore cautions against developing curriculum materials which reflect change only in technical information:

Curriculum theory, therefore, must recognize that curriculum development must be a process of evolution and change. Knowledge continues to develop; society evolves; people change; and the curriculum must keep pace with all these.

Bloom et. al. (1) contended that the field of education should concern itself with emphasizing basic ideas, structure, and methods of inquiry in student learning experiences. By doing so, students would be better able to cope with changes and new information which certainly will confront them throughout their lives.

Planning and Development

Instructors are displaying a growing dependence upon prepared curriculum materials for use in the classroom. Ridenour pointed out the need for practical curriculum development when he wrote (19 p. 9):

Because of the limitations of time, teacher ability, and the infeasibility of one person becoming proficient in so many specialized subject matter areas, there has long been a recognized need for providing help to teachers in the form of instructional materials.

Ridenour noted the impact of the Vocational Education Act of 1963 (16) which broadened the scope of vocational agriculture programs and served to strengthen the need for instructional materials. These new Federal monies were directed at program development in the areas of production and agri-business. Curriculum materials development was further enhanced by the 1968 Vocational Education Amendments which stated (26 p. 5):

The Commissioner is directed by the Act to promote the development...of curriculum materials for use in teaching occupational subjects; to develop standards for curriculum development in all fields,...(and) to evaluate vocational-technical education curriculum materials...

Curriculum guides and core curricula are forms of instructional materials which have enjoyed an upsurge in popularity since the early 1970's. There appears to be a relatively high demand for instructional materials in the form of core curriculums. Hemp (8) suggests that as the types of students enrolled in vocational agriculture change, perhaps agricultural educators should rethink the approaches currently used in curriculum development. His position paper points out a number of advantages of the core curriculum as compared to non-interrelated instructional units. The comprehensive nature of the core curriculum is undoubtedly its most appealing feature.

A project to develop a set of curriculum materials for use in secondary level vocational agriculture programs in Arkansas was conducted by Scanlon (20). Based on information obtained from participating teachers, a comprehensive core curriculum was developed.

There is no conclusive evidence however, to support that core curriculums are the preferred materials by teachers in secondary programs. A study by Householder et. al. (10) in 1976 showed that teachers preferred instructional materials from which to teach rather than curriculum guides for use in planning. In sharp contrast, Drawbaugh (4 p. 65) reported in 1971 that the heaviest demand was for teacher's guides, rather than resources such as job sheets, worksheets, manuals and workbooks.

Regardless of the format used, certain procedures are generally followed in unit development. Rexrode (17) outlined procedures used in planning agricultural education curriculum in the middle school. Activities included reviewing literature, interviewing knowledgeable personnel, meeting with an organizing and evaluating committee as well as surveying teachers to determine final content for the curriculum. A study by Brown (2), dictated the use of similar procedures in both updating and creation of new curricula. Brown made use of a twenty-five member advisory committee for curriculum revision.

As outlined by Schaffarzick (21 p. 571) the following general procedures are used most often by developers of educational curriculums:

1. Determine what types of new curriculum are needed.
2. Use results of research on learning and psychological development as a guide to students' capabilities.
3. Accomplish their work through coordinated and cooperative efforts of groups of people having various competencies.

4. Attempt to supply those who must implement the new curricula with requisite understandings of new subject matter and teaching techniques by providing staff development materials and training.
5. Test the curricula in some fashion at various stages of completion and revise curricula on the basis of such testing.

Evaluation and Distribution

Extensive work has been done on the subject of evaluating and selecting instructional materials for use in vocational agriculture classes. In 1973, Seely (22) noted such materials were available in sufficient quantities, but the problem of selection of appropriate materials for each learning experience was one of extreme importance. Teachers have often evaluated instructional materials on the basis of objectives identified, but it is another matter to practice periodic re-evaluation and revision of these teaching materials.

Evaluations have differed greatly in the degree of formality and subjectivity of the testing procedure. Classroom teachers are in a unique position to evaluate new curricula in the particular situation for which they were designed. By using new material in their classes, they are able to determine its effectiveness in relation to specific learning objectives.

Geesey (5) emphasized the need to evaluate curriculum materials in the classroom and that a method of quantifying the teaching-learning process should be used. This observation supported the need to conduct experimental evaluations. Prior to the late 1960's, the majority of curriculum material evaluation was subjective in nature. Since that time, a resurgence in the use of the experimental designs have come about. Early experimental studies identified the level of student knowledge as the most important dependent

variable to be tested. Achievement tests were usually employed to determine the student level of attainment.

Several studies have focused on the effectiveness of various media used in the educational process. Kahler (12) conducted an experimental evaluation involving the use of eight instructional techniques in 48 vocational agriculture programs. No differences in student achievement were detected that could be attributed to any of the instructional techniques alone. Kahler identified the need for various techniques for use in vocational agriculture instructional programs as follows (p. 32):

...the student became more involved in the learning process and felt that they had benefited more from their instruction as a result of the use of these instructional techniques. It was further observed that in those treatment groups that encouraged independent study in addition to large group instruction, the students achieved at higher levels than did those who were subjected to the large group instruction approach only.

Bloom et. al. described the importance of the achievement test instrument (1 p. 54):

The achievement test is an attempt to quantify achievement of students and constitutes the principle instrument in measuring the extent to which learning has occurred, as well as being a means of facilitating learning.

Ridenour (19) agreed that effect on student achievement should be a major criterion for evaluating new materials. In his 1976 study, Gliem (6) concluded that in addition to achievement levels, student attitudes and abilities should be used in evaluations. This expanded scope of evaluations still exists today. Many research studies have focused on more than simple student achievement. Jacks (11) and Phipps (17) both suggested that the following criterion be used for curriculum evaluation in addition to achievement: (1) subject matter content, (2) readability, (3) organization, (4) timeliness, (5) format, (6) usability, and (7) adaptability.

Grobman (7), Kelly (13), and Tyler (25) have written specifically about the importance of evaluating teaching materials. In addition to criteria in student achievement, other factors which they felt important were: attitude changes, expanded abilities, reduced costs, and increased student motivation. They also recommended experimental designs as the optimum research models to insure that changes identified were a result of manipulation of the instructional material used and not uncontrolled factors.

Richards (18) conducted a study to test the effectiveness of a slide/tape presentation on pesticide use. Like Kahler, Richards found no significant difference in student achievement when using the tested method versus traditional instruction.

A study completed in 1982 by Townsend (24) evaluated an instructional packet dealing with Future Farmers of America (FFA) leadership development. A total of sixty Iowa vocational agriculture departments were randomly selected and assigned to two experimental treatment groups and one control group. The instructional packet and inservice training was provided for one of the experimental groups. The second of these groups was provided with an identical packet but no inservice training. The control group received neither the packet or training, but were directed to teach leadership and FFA as they normally would. A posttest only, control group design was used as the research model. Townsend concluded there was no significant difference in knowledge scores among students in the three groups, although students whose teachers had access to the packet had a more positive attitude toward the FFA organization. Townsend recommended that future instructional material dissemination efforts should include inservice training.

Scanlon (20) used an experimental design to evaluate effects of task instruction sheets on performance levels of students. Two groups of students, experimental and control, were either given access to instruction sheets or denied access as in the Townsend investigation. Scanlon found that experimental group students scored significantly higher on posttest achievement level than did the control group.

Both of these researchers viewed inservice training as a necessary aspect of curriculum material development and distribution. There is some indication that classroom teachers need additional training in order to utilize instructional materials to maximum potential.

The problem of effective instructional materials distribution goes beyond the process of inservice training. Hilton (9) surveyed Pennsylvania vocational agriculture teachers in 1975 to identify their attitudes toward dissemination of selected instructional materials. Utilizing a semantic differential technique as part of his instrument, he asked respondents to evaluate instructional material by reacting to ten pairs of bipolar adjectives. While this technique failed to provide an attitude measure, it did provide an indication of attitude direction. Hilton concluded that (1) teachers selected units based on the content and method of presentation, (2) teachers want complete units with teacher-learning activities, and (3) teachers desired dissemination on a direct, one-to-one basis or through a workshop setting.

Summary

Instructional aids should not be viewed as a cure-all for education's ills. Well-conceived curriculum materials will certainly aid in increasing efficiency, but may not produce a significant advantage in student achievement.

Evaluations often focus on how materials affect student achievement, but perhaps more emphasis should be placed on determining changes in teaching roles as a result of the use of instructional materials. Generally younger teachers, with three or fewer years of experience, are the greatest users of instructional materials. More tenured teachers, however, tend to reduce their dependence on prepared curriculum materials in lieu of materials which they have traditionally used. These experienced teachers usually demand some sort of proof to substantiate the value of newly-created instructional materials.

The majority of research done thus far has been unable to detect significant increases in student achievement when comparing one type of material with another. Of the studies reviewed, indications were that curriculum materials were successful in enhancing the learning process, in turn contributing to student achievement.

Instructional materials have increased the effectiveness of quality teachers in the field, but cannot be expected to transform poor teachers into good ones. Changes in agriculture have made it necessary for teachers to rely heavily on up-to-date materials in order to provide appropriate instruction for their students. As materials are developed in the future, they should be based on the principle to accomodate the need for students to become more self-directed in their learning.

CHAPTER III

METHOD OF PROCEDURE

The main purpose of this investigation was to determine the effectiveness of an Agricultural Banking and Sources of Farm Credit instructional unit. Specific research procedures employed in the study are described in the following paragraphs under the headings: Development of Instructional Unit, Research Design, Population, Instrumentation, Collection of Data, Analysis of Data.

Development of Instructional Unit

The instructional unit evaluated as part of this study was developed by the researcher. Materials were collected, adapted, developed and arranged in specific problem areas. Agricultural Banking and Sources of Farm Credit was selected as an appropriate title for the unit since the material dealt mainly with basic concepts of farm credit.

Materials included in the unit were assembled in a problem-solving/experimental learning format. Each problem area was characterized by the following components: problem area question, specific learning objectives, situational statement, study questions, references and instructional materials, learner needs, suggested interest approach, learning activities, conclusion, evaluation criteria and optional activities.

Problem area questions were developed to identify basic problems students would need to solve in each subject area. These questions were designed to allow for completed instruction in one to two 50-minute class periods.

Situational statements were included which directed instructors to identify "real-life" situations in the local community which characterized the problem at hand. Student's supervised occupational experience programs were suggested as sources from which situations could be derived.

Study questions were provided to identify specific questions to be answered. After answering all study questions, students should have been able to answer the problem area question. References and instructional materials related to each problem area were continually identified throughout the unit.

At least one activity included in each problem area was intended to arouse student interests. Such activities included guest speakers ranging from bankers, businessmen and the utilization of field trips to local credit institutions. Learning activities in the form of information sheets and handouts were also provided.

Criteria for evaluating student achievement in each problem area were suggested. Instructors were encouraged to develop tests and quizzes for their own use. However, due to the limited time available in which to implement the study, instructors were asked to teach exactly as suggested in the unit.

Students were encouraged to solve problems by acquiring and applying information relevant to each problem area. Learning activities also emphasized the importance of student experiences to enhance the learning process.

Research Design

A pretest-posttest, control group design as described by Campbell and Stanley (3) served as the research model. The specific design is diagrammed below:

S	R	X_1	O_1	O_3	O_5	O_7	
S	R	X_2	O_2	O_4	O_6	O_8	O_9

where:

- S indicates nonrandom selection of the sample from the population.
- R indicates random assignment of selected teachers to either experimental or control treatment groups.
- X_1 indicates the control group treatment involving instructors teaching the unit using "traditional" instructional materials.
- X_2 indicates the experimental treatment involving instructors teaching the instructional unit provided by the researcher.
- O_1, O_2 represent a posttest instrument designed to collect information from students indicating their level of knowledge of Agricultural Banking and Sources of Farm Credit.
- O_3, O_4 represent a posttest instrument designed to collect information from students indicating their attitude toward Agricultural Banking and Sources of Farm Credit concepts.
- O_5, O_6 represent an instrument designed to collect student personal and school situational information.
- O_7, O_8 represent an instrument designed to collect instructor personal and school situational information.
- O_9 represents an instrument designed to collect information from experimental instructors regarding their perceptions of the instructional unit.

Population

Due to uniformity in the areas of grade point average and hours of agri-business instruction taken, it was decided to utilize a group of 19 Agricultural Education student teachers (instructors) from Kansas State University. These instructors were in the process of completing their professional semester of their degree program in Agricultural Education.

All instructors were initially contacted by letter to ask for their participation in the experiment. The investigation was conducted between April 16, 1984 and April 22, 1984 (see Appendix A). The letter asked instructors to meet with their cooperating teachers about participating in the study. Instructors who were willing to participate were randomly assigned to experimental or control treatment groups by arranging school names in alphabetical order using a table of random numbers. Nine instructors were assigned to the experimental group and eight to the control treatment group. After being assigned to a treatment group, each instructor was given a coded school number in order to assure anonymity.

Certain uncontrollable factors made it necessary to reject data from some instructors. Data was rejected from subjects who (1) failed to complete the unit instruction; or (2) failed to administer the posttests of knowledge and attitude. Table 1 summarizes the group assignments and number of students in each group.

TABLE 1
INSTRUCTOR/STUDENT GROUP ASSIGNMENTS AND SCHOOL SIZE

Treatment Group	Number	School Size
Experimental 1	(N=7)	100-300
Experimental 2	(N=4)	100-300
Experimental 3	(N=11)	51-100
Experimental 4	(N=10)	100-300
Experimental 5	(N=15)	100-300
Experimental 6	(N=3)	100-300
Experimental 7	(N=1)	51-100
Experimental 8	(N=3)	100-300
Control 9	(N=31)	300-500
Control 10	(N=3)	51-100
Control 11	(N=2)	100-300
Control 12	(N=8)	500+
Control 13	(N=2)	100-300
Control 14	(N=4)	51-100
TOTALS	104	

Experimental treatment group instructors were asked to teach Agricultural Banking and Sources of Farm Credit using the approach suggested in the instructional unit. Control group instructors were provided a list of problem areas and specific objectives which were included in the instructional unit and were instructed to utilize materials available to them (see Appendix D). It is assumed that both groups focused their instruction on these problem areas.

Differences observed in the results of this study should be attributed to manipulation of the independent variable (i.e., instructor access to the instructional unit). Requirements for both internal and external validity appear to have been met for this study. A single independent variable was manipulated, fulfilling the requirement for internal validity. Due to the common nature of other programs throughout the state of Kansas, external validity assumptions were not grossly violated.

Instrumentation

Several data collection instruments were developed and utilized as a part of this investigation. Student achievement levels were determined through administration of a nine item, multiple choice examination (see Appendix J). The exam was developed by the researcher and consisted of questions pertaining to each problem area. After initial development of the exam, it was presented to Agricultural Education and Agricultural Economics faculty members at Kansas State University, who were asked to evaluate the instrument for content and face validity.

Indications of student attitudes toward Agricultural Banking and Sources of Farm Credit concepts were collected through the use of a student attitude inventory (see Appendix J). Six concepts related to the subject matter were evaluated by students who were asked to indicate

their feelings or attitude toward each concept presented. A semantic differential technique was employed requiring students to respond to each concept on a five-unit scale. Values from one to 11 were assigned to each response position from left to right on the scale; however student instruments did not reveal these values.

Accompanying student posttest achievement and attitude inventories were a set of student data instruments used to collect personal and school situational information. An instructor data instrument was used to collect specific personal and school situational information. In addition, experimental group instructors were asked to complete an instrument used to evaluate the instructional unit. A semantic differential technique was employed to collect responses regarding instructor attitude toward the instructional unit.

Collection of Data

Experimental and control group instructors were provided with detailed instruction sheets on how to carry out instruction and collect student data (see Appendices B and C). Instructors were asked to describe the extent of and need for participation before asking for student cooperation.

Instructional units and a list of problem areas were mailed April 12, one week prior to the initial unit instruction. Experimental group instructors were asked to review the unit and familiarize themselves with its format. Control group instructors were asked to review the list of problem areas and specific objectives. Control group instructors were asked to provide classroom instruction for each of these areas. Instructional resources or materials were not identified or suggested for use by the control group instructors.

A follow up letter along with posttest data collection instruments were mailed one week prior to the completion deadline (see Appendix H). Following unit instruction, students completed the multiple-choice examination and attitude inventory. Personal and school information as well as an instructor concern instrument were requested from both treatment group instructors at this time (see Appendix I).

Analysis of Data

Data collected was analyzed using the IBM computer facilities at Kansas State University. The Statistical Package for the Social Sciences (SPSS) was used to perform appropriate descriptive and inferential statistics. To insure consistency and accuracy, all data were coded and placed on code sheets by the researcher. A data entry operator punched all data cards directly from the code sheets. All data cards were verified by the key operator to insure accuracy.

CHAPTER IV

ANALYSIS OF DATA

This chapter presents the statistical analysis and the tabulation of findings of the investigation. In addition to selected demographic data collected from treatment group instructors and students, posttest scores of student achievement and attitude levels were obtained.

One-way analysis of variance was employed to analyze posttest mean scores of both achievement and attitude. The statistical analysis also utilized the Pearson product-moment correlation coefficient r , to describe student and instructor characteristic relationships which existed with student achievement and attitude levels. Appropriate post-hoc analysis comparisons were made.

Personal and Situational Characteristics

At the time of posttest data collection, selected personal and school situational information was gathered from both group instructors and students. Table 1 in Chapter III (p. 21) contains information concerning specific group number assignments as well as corresponding school size. Tables 2 through 4 present the remaining selected characteristics. Data summarized in Table 2 indicates there were 14 instructors involved in the study with an average grade point of 2.9. This grade point average compares favorably with a 1983 report of a Kansas State University Department of Adult and Occupational Education study of past Agricultural Education students at time of graduation. The average GPA was 3.0. In addition to the indicated GPA level, group instructors averaged 6.8 hours of instruction in

agri-business classes during their degree programs. These classes included those courses specified in the Agricultural Education list of approved courses for the Agri-business Specialty Certification.

TABLE 2
INSTRUCTOR GPA AND HOURS OF AGRI-BUSINESS CLASSES

Treatment Group	Number Groups	Average			
		Instructor GPA	SD	Instructor's Hours Agri-Business	SD
Experimental Groups	8	3.2	.3	7.2	2.5
Control Groups	6	2.6	.4	5.8	.9
TOTALS	14	2.9		6.8	

As indicated in Table 3, a total of 104 students participated in the investigation. Many similarities existed among students of both the experimental and control groups. Their average age was 17 years with the majority of students being at the 11th grade level. Cumulative vocational agriculture instruction of the students averaged 2.9 years. Experimental group students had spent an average of 3.2 years in the vocational agriculture classroom whereas control group students were slightly lower at 2.5 years. The grade level of participating students was slightly above the state norm.

TABLE 3
STUDENT AGE, GRADE LEVEL AND YEARS VO-AG

Treatment Group	Number Students	Average		
		Age	Grade Level	Years Vo-Ag
Experimental Groups	54	17	11	3.2
Control Groups	50	17	11	2.5
TOTALS	104	17	11	2.9

Inspection of Table 4 indicates the vast majority of students were male. These numbers generally agree with figures released for Kansas vocational education placements. A slightly higher percentage of females participated within the control; 60 percent versus 40 percent in the experimental.

TABLE 4
GENDER OF CLASSROOM STUDENTS

Treatment Group	Male		Female	
	Number	Percent	Number	Percent
Experimental Groups	52	53	2	40
Control Groups	47	47	3	60
TOTALS	99	100	5	100

Test Mean Scores

Hypotheses one and two speculated that instruction from the prepared unit would increase student achievement and attitude. Hypothesis one theorized that students receiving prepared unit instruction would score higher on an achievement test in basic agricultural banking skills than students receiving traditional instruction. Hypothesis two inferred that students receiving prepared unit instruction would score higher on an attitude inventory battery dealing with agricultural banking than students receiving traditional instruction. As can be seen by observing Tables 5 and 6, mean score differences among experimental groups indicate wide variability. Control group scores generally appear to be more consistent.

TABLE 5
POSTTEST ACHIEVEMENT MEAN SCORES

Treatment Group		Number Students	Mean Score	SD
Experimental	1	7	77.0	12.7
Experimental	2	4	66.0	12.7
Experimental	3	11	68.0	16.2
Experimental	4	10	72.6	22.1
Experimental	5	15	84.3	9.9
Experimental	6	3	80.7	16.8
Experimental	7	1	77.0	0
Experimental	8	3	84.3	6.4
TOTALS		54	76.2	15.7
Control	9	31	74.5	12.0
Control	10	3	77.0	22.0
Control	11	2	71.5	7.8
Control	12	8	77.0	5.9
Control	13	2	66.0	15.6
Control	14	4	68.8	13.8
TOTALS		50	74.1	11.7

TABLE 6
POSTTEST ATTITUDE MEAN SCORES

Treatment Group	Number Students	Mean Score ^a	SD
Experimental 1		39.9	4.7
Experimental 2		42.8	2.8
Experimental 3		39.7	8.2
Experimental 4		45.3	14.1
Experimental 5		39.2	2.1
Experimental 6		36.0	3.6
Experimental 7		39.0	0.0
Experimental 8		43.0	6.2
TOTALS	54	40.8	7.7
Control 9		41.6	5.2
Control 10		41.3	3.2
Control 11		42.0	8.5
Control 12		42.9	5.9
Control 13		42.5	3.5
Control 14		38.5	7.3
TOTALS	50	41.6	5.3

^aAttitude inventory measured six items with a total possible score of 66 points.

As summarized in Table 7, the posttest mean score for student achievement was 76.2 for the experimental group while the posttest mean score for the control group was 74.1. A one-way analysis of variance revealed no significance between the experimental and control treatment group with regard to student achievement. Posttest mean scores for experimental and control group attitude were 40.8 and 41.6 respectively. Again, following the administering of a one-way analysis of variance, no significant difference in student attitude was detected between the two groups. Therefore hypotheses one and two were rejected.

TABLE 7
SUMMARY OF POSTTEST ACHIEVEMENT AND ATTITUDE

Treatment Group	Number Students	Mean Score ^a	SD
<u>Achievement</u>			
Experimental Groups	54	76.2	15.7
Control Groups	50	74.1	11.7
TOTALS	104	75.2	
<u>Attitude</u>			
Experimental Groups	54	40.8	7.7
Control Groups	50	41.6	5.3
TOTALS	104	41.2	

^aMean scores connected by a solid line indicate no significant difference was detected.

Student and Instructor Correlations

The third objective of the investigation suggested identifying relationships which might exist between student and instructor personal and situational characteristics in connection with student achievement or attitude toward Agricultural Banking and Sources of Farm Credit. A summary of a correlational study analysis is presented in Table 8. This data indicates that no significant correlations exist among the selected characteristics and student achievement levels. However, further inspection reveals moderately significant relationships existed between the instructor's hours of agri-business ($r=.18$), student grade level ($r=.21$), student years of vocational agriculture instruction ($r=.18$) and student response on the attitude inventory. Student grade level conveyed the strongest relationship.

TABLE 8
RELATIONSHIPS OF SELECTED CHARACTERISTICS
TO STUDENT ACHIEVEMENT AND ATTITUDE

Posttest Treatment	<u>School</u>	<u>Instructor</u>		<u>Student</u>			
	Size	GPA	Hours Agri- Business	Grade Level	Years Vo-Ag	Gender	Age
Achievement	--	---	--	---	---	--	---
Attitude	--	---	.18 ^a	.21 ^a	.18 ^a	--	---

^aIndicates an r value of $P = (<.05)$

Instructor Perceptions

In order to fulfill the needs of objective four, identifying instructor concerns regarding the quality and value of an Agricultural Banking and Sources of Farm Credit instructional unit, it was necessary to tabulate a number of instructor perceptions. A summary of their responses may be found in Table 9. The instructors generally found the unit to be well-constructed, understandable and complete. The majority found the unit easy to teach within the suggested one-day time period while at the same time not proving too difficult for students. As a group, the instructors indicated they would like to participate in other studies similar to this investigation in the future.

TABLE 9

EXPERIMENTAL GROUP INSTRUCTORS' PERCEPTIONS OF UNIT

Perception	<u>Categories and Number of Responses</u>				
	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
Well constructed and understandable.	—	—	(1)	(4)	(3)
Easy to teach.	(1)	—	(2)	(1)	(4)
Complete.	—	(1)	—	(5)	(2)
Contained too much information for a one-day lesson.	(2)	(3)	(1)	(2)	—
Material too difficult for students.	(2)	(6)	—	—	—
Would like to participate in studies similar to this project in the future.	—	—	(4)	(3)	(1)

Summary

Data presented in this chapter represents selected demographic data, posttest mean scores for both student achievement and attitude, relationships existing between selected characteristics and student achievement and attitude as well as a summary of instructor perceptions of the unit.

A total of 14 instructors participated in the study, each averaging a 2.9 grade point and 6.8 hours of agri-business instruction.

The average student was 17 years old, had 2.9 years of vocational agriculture instruction and was placed at the 11th grade level. Slightly over 95 percent of participating students were male.

Achievement posttest mean scores averaged 76.2 for the experimental group and 74.1 for the control group. No significant difference in these scores was detected at the .05 level. The average attitude score for the experimental group was 40.8 with the control group scoring an average of 41.6. When tested at the .05 level, no significant difference was found. Both hypotheses predicting higher scores by the experimental group were rejected.

Relationships among variables were tested for mean score correlations. No significant relationships existed toward student achievement. However, the variables of instructor's hours of agri-business, student grade level and years of vocational agriculture indicated moderate relationships did exist.

Instructor's perceptions were generally favorable toward the prepared unit with regard to unit construction, ease of teaching and difficulty of the subject matter contained within. As a group, the instructors indicated a willingness to participate in future studies of this type.

CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

This chapter serves as a summary of the investigation. The purpose, objectives, hypotheses and methodology are reviewed. Major findings are reported, along with conclusions and recommendations drawn from these findings. Finally, consideration is given to areas in need of additional research.

Summary of the Study

Purpose

The primary purpose of the study was to experimentally test the effectiveness of an instructional unit concerning agricultural banking as it related to student level of knowledge and attitude.

Objectives

Four objectives were identified as essential to accomplish the purpose of the study. They were:

1. To determine the effectiveness of an Agricultural Banking and Sources of Farm Credit instructional unit as evaluated by student knowledge and attitude scores.
2. To determine the effectiveness of an Agricultural Banking and Sources of Farm Credit instructional unit in relation to traditional instructional materials.
3. To identify relationships which may exist between student and instructor personal or school situational characteristics

and student achievement or attitude toward Agricultural Banking and Sources of Farm Credit.

4. To identify instructor concerns regarding the quality and value of an Agricultural Banking and Sources of Farm Credit instructional unit.

Hypotheses

Two hypotheses were determined to be essential to the development and conduct of the study. It was hypothesized that:

1. Students receiving prepared unit instruction would score higher on an achievement test in basic agricultural banking skills than students receiving traditional instruction.
2. Students receiving prepared unit instruction would score higher on an attitude inventory battery dealing with agricultural banking than students receiving traditional instruction.

Methodology

A posttest only control group experimental design was used with an intact group of 19 instructors and 104 students randomly assigned to either experimental or control treatments. Following unit instruction, demographic data was collected along with the administering of both a student achievement test and attitude inventory.

Major Findings

The four objectives and two hypotheses were tested in order to fulfill the purpose of the investigation. A one-way analysis of variance was employed to evaluate both hypotheses at the .05 level of significance. In addition, a Pearson product-moment correlation comparison was utilized

in order to satisfy the requirements of objective three, again at the .05 level of significance. Appropriate post-hoc comparison analysis was performed. Results obtained from a summary of instructor comments were used to evaluate the conditions specified in objective four. The major findings of the investigation were as follows:

1. Participating instructors had an average grade point of 2.9 on a four-point scale and each had received an average of 6.8 hours of previous agri-business instruction.
2. Students averaged 17 years of age at the 11th grade level and had been in the vocational agriculture curriculum for an average of 2.9 years. Over 95 percent of the students were male.
3. Based on the analysis of posttest student achievement scores among the treatment groups, no significant difference was found between the experimental group mean score (76.2) and the control group mean score of (74.1).
4. Based on the analysis of posttest student attitude inventory mean scores among the treatment groups, no significant difference was detected between the experimental group mean score (40.8) and the control group mean score (41.6).
5. Based on a correlational analysis of student and instructor relationships to student achievement scores, no statistically significant correlations existed among the selected characteristics and student achievement.

6. Based on a correlational analysis of student and instructor relationships to student attitude scores, statistically significant relationships were found to exist between:
 - a. The instructors' hours of agri-business instruction and student attitude ($r=.18$).
 - b. The students' grade level and student attitude ($r=.21$).
 - c. The students' years of vocational agriculture instruction and student attitude ($r=.18$).
7. Based on a summary of instructor perceptions, the unit was found to be favored with regard to construction, ease of teaching and difficulty of subject matter presented. In addition, instructors indicated a willingness to participate in future studies of this type.

Conclusions

Analysis of the data resulted in the major findings from which the following conclusions are drawn:

Conclusion 1: Knowledge

The use of the prepared instructional unit did not significantly increase student knowledge of the subject matter.

Conclusion 2: Attitude

The use of the prepared instructional unit did not significantly increase student attitude toward the subject matter.

Conclusion 3: Correlations

No correlations could be drawn between student and instructor selected characteristics and student achievement level. However, direct correlations did exist among instructors' hours of agri-business, student grade level, students' years of vocational agriculture and student attitude toward the subject matter.

Recommendations

Based on the conclusions drawn from the data and the researcher's observations and experiences, the following recommendations are suggested in relation to curriculum unit development, evaluation and distribution.

1. While no significant increase in student learning occurred as the result of prepared unit instruction, instructors should continue to concentrate mainly on the dissemination of instructional material as a means of facilitating learning.
2. Efforts by classroom instructors should be directed toward improving student attitude of subject matter. Simply altering the manner in which the unit is presented will not necessarily increase student attitude.
3. Teacher educators should continue placing greater emphasis on training instructors in the areas of Agricultural Economics and Business in order to improve student achievement and attitude.
4. Instructors should be aware that grade level and years of vocational agriculture instruction may have a strong influence on student attitude. Student achievement shows no such correlation with these variables.
5. Development and distribution of curriculum material should include some form of pre-training for instructors. Inservice training is a necessary aspect of curriculum development and distribution in order to insure maximum utilization.

6. Teacher educators and coordinators of beginning teacher programs should place greater emphasis on skills which will enable first year teachers to fully utilize prepared curriculum materials.
7. Subject matter should continue to be taught in various forms. Different interest approaches should be utilized to increase student achievement and attitude toward a particular subject.
8. Continued efforts need to be made in the development, evaluation and distribution of curriculum materials. These efforts will result in enhancement of the learning process, therefore affecting student achievement and attitude.

Recommendations for Further Study

The following recommendations are drawn from the conclusions, theory and observations which were a part of the investigation. Test results, researcher's observations and limitations to the study prompted the researcher to make the following recommendations.

1. Research should be conducted to test validity of the instruments used to collect student data in the study in order to determine whether or not they are consistent with other similiar instruments.
2. Reliability of the evaluated unit should be conducted prior to actual instruction by means of a field test.

3. Future studies should strive for uniform group sizes. Mean score variabilities within these groups would probably decrease, providing more consistent and accurate data.
4. A greater number of students should be utilized in a unit evaluation than the number used in this study. Because of the relatively small group sizes, significant differences were not readily detectable.
5. A longer and more demanding achievement instrument should be used in order to allow greater discrimination among treatment groups.
6. The collection of additional demographic data such as instructor occupational experience and student past experience with the subject matter would allow for more effective comparisons among dependent variables.
7. Research of newly-developed instructional units should continue. Instructors generally expressed a favorable attitude toward the unit and the investigation itself. Further studies of this type would provide continued interaction between researchers and instructors in the field.

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APPENDICES

APPENDIX A
LETTERS TO COOPERATING INSTRUCTORS



**Department of Adult
and Occupational Education**

College of Education
Blumont Hall 363
Manhattan, Kansas 66506
913-532-5535

April 12, 1984

Dear Agricultural Education Student Teacher:

You have been selected to participate in a statewide project concerning the development of comprehensive curriculum units dealing with Agricultural Finance. One purpose of this study will be to determine the effectiveness of an introductory unit on Agricultural Banking and Sources of Farm Credit.

The study divides all Spring Block 1984 student teachers into two groups. You have been randomly selected to the experimental group which involves teaching the test unit. Specific instructions concerning your duties are contained in the enclosed material.

The entire project is geared toward entry-level instructors and is designed to take minimal time from your teaching schedule. In utilizing your skills, the unit evaluation should be completed before student teaching ends.

Since this is a statewide project, your active participation and effort is essential to the success of future curriculum development.

If you experience any difficulties or have questions regarding the material you have received, please do not hesitate to contact me at the Ag Education office (913) 532-5904. Thank you in advance for your cooperation.

Sincerely yours,

William R. Yoakum
Graduate Teaching Assistant

Richard F. Welton, Professor
Agricultural Education

Enclosures



**Department of Adult
and Occupational Education**

College of Education
Bluemont Hall 363
Manhattan, Kansas 66506
913-532-5535

April 12, 1984

Dear Agricultural Education Student Teacher:

You have been selected to participate in a statewide project concerning the development of comprehensive curriculum units dealing with Agricultural Finance. One purpose of this study will be to determine the effectiveness of an introductory unit on Agricultural Banking and Sources of Farm Credit.

The study divides all Spring Block 1984 student teachers into two groups. You have been randomly selected to the control group which involves teaching a unit from a set of problem areas. Specific instructions concerning your duties are contained in the enclosed material.

The entire project is geared toward entry-level instructors and is designed to take minimal time from your teaching schedule. In utilizing your skills, the unit evaluation should be completed before student teaching ends.

Since this is a statewide project, your active participation and effort is essential to the success of future curriculum development.

If you experience any difficulties or have questions regarding the material you have received, please do not hesitate to contact me at the Ag Education office (913) 532-5904. Thank you in advance for your cooperation.

Sincerely yours,

A handwritten signature in cursive script that reads "William R. Yoakum".

William R. Yoakum
Graduate Teaching Assistant

A handwritten signature in cursive script that reads "Richard F. Welton".

Richard F. Welton, Professor
Agricultural Education

Enclosures

APPENDIX B
EXPERIMENTAL GROUP INSTRUCTION SHEET

INSTRUCTION SHEET (EXPERIMENTAL)

Read this instruction sheet in its entirety before proceeding with the lesson.

As an experimental unit instructor, you will be presenting the unit on banking and finance as suggested in the enclosed material. It is very important that you teach only the material provided in the lesson plan, using no outside references. It is the intent to evaluate only the unit and not the instructor.

Like the control group instructors, you will present the lesson based on the specific objectives listed on the cover sheet of the lesson. The control group instructors have nothing else, whereas you have a complete lesson from which to teach.

It will be your responsibility to make available the proper materials as outlined in the procedure.

The lesson was developed for upper level high school students. It is suggested that you teach the material to juniors and seniors. Class size need not be a factor in deciding which class to utilize.

It is possible your students have covered this same type of material or are presently studying an unrelated area. Remember, this project is designed to test only the effectiveness of the unit compared with the subject taught in a "traditional" manner. Please seek the cooperation of your supervising teacher in completing the lesson.

The unit is designed to be taught in a one hour period. Use only one hour, even at the expense of eliminating parts of the handout material. It is important to cover the objectives completely. The short exam and completion of forms should take no longer than one-half of a following period.

Therefore, we ask that you make allowances in your schedule to fulfill your segment of the study. As you will see later in this sheet, the study should be completed by the end of this month.

The unit content is designed to help your students become more aware of a growing point of concern, agricultural credit. Following is a detail of instructions which should help make the task a success. Thank you again for your cooperation.

--You will receive the exam and follow up forms in a separate mailing on or about Friday April 20, 1984. This will allow you to properly plan the lesson sequence without having prior test knowledge.

PROCEDURE:

Follow these instructions carefully, as they will determine the overall effectiveness of the unit.

1. Review the lesson plan, looking closely at the suggested procedure.
2. Review the two handouts- "Credit Overview" and "Presenting Yourself" to familiarize yourself with the information. These make up the individualized portion of the lesson.
3. Explain the context of the problem to the students. Emphasize the importance of being honest and straightforward in all responses.
4. Present the lesson. Follow only the outlined procedures.
5. Hand out both information sheets. This will comprise the individual instruction section of the lesson.
6. Day 2-or on any subsequent day:
 - a. Emphasize the need for honest response to exam questions.
 - b. Have students complete the 20 question multiple-choice exam. (You are encouraged to use test results as a method of personal evaluation. However, you are not required to grade these exams as a part of the study.)
 - c. Have students complete forms 1 & 2.
 - d. Complete instructor's forms 3 & 4.
 - e. Return the exam and forms 1,2,3 & 4 to: William R. Yoakum
Ag Education
342 Bluemont Hall
Kansas State University
Manhattan, KS 66506

(Use the self-addressed stamped envelope.)

THE DEADLINE FOR RETURNING ALL FORMS IS FRIDAY APRIL 27. This is to avoid any conflict with State FFA contests.

If you have any questions, do not hesitate to call. Thanks again.

APPENDIX C
CONTROL GROUP INSTRUCTION SHEET

INSTRUCTION SHEET (CONTROL)

Read this instruction sheet in its entirety before proceeding with the lesson.

As a control unit instructor, you have perhaps the most important task in the study. It is your responsibility to teach only from the specific objectives listed on the cover sheet of the lesson.

The manner in which you present the lesson on banking and finance is left totally up to you.

The experimental group instructors will teach from a prepared lesson plan, covering the exact same objectives.

Testing of the unit will be the same 20 question multiple-choice exam, which will deal only with the specific objectives.

It will be your responsibility to develop any material given to your students. You are free to utilize any resources, whereas the experimental instructors are limited to the lesson material sent to them.

Develop your lesson for upper level high school students. It is suggested that you teach the material to juniors and seniors. Class size need not be a factor in determining which class to utilize.

It is possible your students have covered this same type of material or are presently studying an unrelated area. Remember, this project is designed to test only the effectiveness of the unit compared with the same unit taught in a traditional manner-control group instruction.

The unit should be taught in a one hour period. Use only one hour, as the nearer you replicate the time period of the experimental instruction, the better the study results. It is important to cover the objectives completely. The short exam and completion of forms should take no longer than one-half of a following period.

Therefore, we ask that you make allowances in your schedule to fulfill your segment of the study. As you will see later in these instructions, the study should be complete by the end of this month.

The purpose of the study is to test only the unit. Your control lesson will facilitate close comparison of the test unit to "traditional" unit instruction. Following is a detail of instructions which should help make your task a success. Thank you again for your cooperation.

--You will receive the exam and follow up forms in a separate mailing on or about Friday April 20, 1984. This will allow you to properly plan the lesson sequence without having prior test knowledge.

PROCEDURE:

Follow these instructions carefully, as they will determine the overall effectiveness of the unit.

1. Review the objective sheet.
2. Plan the lesson covering the points on the objective sheet. Use any available resources.
3. Explain the context of the study to the students. Emphasize the importance of being honest and straightforward in all responses.
4. Present your prepared lesson.
5. Day 2-or any subsequent day:
 - a. Emphasize the need for honest response to exam questions.
 - b. Have students complete the 20 question multiple-choice exam.
(You are encouraged to use the test results as a method of personal evaluation. However, you are not required to grade these exams as a part of the study.)
 - c. Have students complete forms 1 & 2.
 - d. Complete instructor's forms 3 & 4.
 - e. Return the exam and forms to: William R. Yoakum
Ag Education
342 Bluemont Hall
Kansas State University
Manhattan, KS 66506

(Use the self-addressed stamped envelope.)

THE DEADLINE FOR RETURNING ALL FORMS IS FRIDAY APRIL 27. This is to avoid any conflict with State FFA contests.

If you have any questions, do not hesitate to call. Thanks again.

APPENDIX D
OBJECTIVE SHEET

ENTERPRISE: Farm Management

UNIT: Agricultural Finance

LESSON: Agricultural Banking and Sources of Farm Credit

I. TERMINAL OBJECTIVE

After completing this unit, the student will be able to define sources of credit, explain their advantages and disadvantages, and categorize types of credit.

II. SPECIFIC OBJECTIVES:

After unit instruction, the student will be able to:

- A. Determine the best time to use borrowed money.
- B. Know under what conditions not to borrow.
- C. Explain the three basic types of credit.
- D. Identify the two categories of lenders.
- E. Describe sources of short-term credit.
- F. Describe sources of intermediate-term credit.
- G. Describe sources of long-term credit.
- H. Identify factors used to determine credit needs.
- I. Explain five things a lender looks for in a borrower.
- J. Explain four things a borrower should look for in a lender.

APPENDIX E
PREPARED UNIT LESSON PLAN

III. TEACHING METHOD

Problem Solving and Individual Study

IV. SUGGESTED ACTIVITIES

Instructor: Use only this plan to teach the lesson.

1. Provide students with objective sheet.
2. Discuss objectives with students.
3. Provide students with information sheets.
4. Discuss information sheet (present lesson).
5. Give test.

Student:

1. Read Objectives.
2. Study information sheets.
3. Take test.

V. INSTRUCTIONAL MATERIALS PROVIDED

- A. Handout: "Farm Credit Overview"
- B. Handout: "Presenting Yourself as a Borrower"

VI. INTRODUCTION

Emphasize timeliness of subject. Cite examples of farm failures and what might have caused those failures. Find out how many of your students have ever borrowed money through a financial institution. Use a student's program as an example of how they could benefit and expand their SOE by borrowing. Stress the fact that they need to know some background information about credit before they make an application for a loan. Tie back into your example of the farm failure and the fact that had they known more before they borrowed, their farm failure might have been prevented.

VII. LESSON CONTENT

This content is designed to introduce and supplement the information contained in the handouts.

A. Types of Loans

1. Long-term loans - extend for periods over seven years. Used for purchases of land and large buildings.
2. Intermediate-term loans - normally are made for one to seven years. Used to purchase machinery, equipment and breeding livestock.
3. Short-term loans - generally made for less than one year. Used for seed, feed and fertilizer; seasonal expenses.

B. Credit Sources

1. Commercial Banks - convenient, personal loans. Often made on borrower's character. Drawbacks include higher interest rates and shorter length on loans made.
2. Insurance Companies - almost exclusively long-term loans on land. Disadvantages include limited availability and penalties for early prepayment.
3. Farm Credit System - includes three separate banks. The Federal Land Banks, Production Credit Association, and Banks for Cooperatives. The FLB offers long term loans (10-40 years) at low interest rates. PCA generally makes low interest loans for operating expenses, generally (1-7 years). Both require borrower to purchase stock in the local association as well as having complicated loan procedures.
4. Farmers Home Administration - makes loans to applicants who aren't qualified for other loans. They also make loans to young people. Disadvantages include not being a permanent credit source and financing on larger acreages.
5. Individuals - readily available loans at low interest rates. Greater flexibility in owner financing. May not be available for long-term arrangements.
6. Dealers - offer convenience to farmer. Loans are often easier to obtain if you are a poor risk. However, interest rates are usually much higher.

C. Determining Credit Needs

There are five factors to keep in mind when deciding how much to borrow.

1. Don't borrow more than the value of the farm.
2. Base your loan amount on year to year farm earnings.
3. Consider other debts and interests in your financial situation.
4. Remember to consider your own abilities in managing your operation and finances.
5. Determine if outside income is to be used in deciding how much to borrow.

- D. Discuss briefly the handout "Presenting Yourself as a Borrower." Cover the key factors.

1. The Man
2. Financial Position and Progress
3. Repayment Capacity
4. Purpose of the Loan
5. Security or Collateral
6. Lender's Character
7. Lending Policies
8. Dependability
9. Experience

VIII. SUMMARY

Make sure students have access to handouts. Cover key points in the lesson and allow time for individual reading. Answer any questions at this time.

IX. REFERENCES

APPENDIX F

HANDOUT: A FARM CREDIT OVERVIEW

A FARM CREDIT OVERVIEW

Introduction

Because of the ever-present cost-price squeeze in agriculture, it is important for you as a potential borrower to fully understand the basics of borrowing and the structure of agricultural banking.

Used wisely, borrowed money allows you to grow and expand your program faster.

But, used unwisely, it can force you into hardship -- and very possibly bankruptcy.

This handout is designed to give you a basic understanding of farm credit and how you can best utilize borrowed money.

Deciding When to Borrow

The easiest rule is to borrow if you can make more money with the loan.

It's easy to see that borrowing at 10% interest for a 15% return on hogs, for example, is a wise move.

When Not to Borrow

Most generally, don't borrow on the spur of the moment. Buying a new tractor with borrowed money, simply because your neighbor did, could be an unwise move.

Don't borrow unless you know where and when the repayment money will come from.

Don't borrow on too short of a repayment schedule. Leave yourself adequate time to repay your debt.

Always seek expert advice before borrowing. Words of wisdom are helpful.

Never borrow too little. Unless you have adequate money to accomplish what you set out to do, you'll probably be better off without any loan.

Sources of Credit

In searching for a lender, it is to your advantage to "shop around." Compare interest rates, repayment schedules and how they evaluate you as a potential borrower.

Lenders may be classified as either institutional or noninstitutional. In selecting the appropriate credit source, you must understand the type of credit needed.

There are three basic types:

- 1) Short - term -- working-capital loans for seasonal production.
- 2) Intermediate - term -- financing for farm equipment and improvements; operational loans.
- 3) Long - term -- used for purchasing land or building a home.

INSTITUTIONAL LENDERS

- A. Commercial Banks. Banks offer short and intermediate term and some long term credit. They also provide financial advisement to clients. Disadvantages include shorter loan periods and limits to loan size.
- B. Insurance Companies. These lenders are important sources of long-term credit. They are concentrated in major agricultural regions and allow you to borrow against your farm value. Some companies assess penalties for early prepayment.
- C. Farm Credit System. Three kinds of banks exist within the system - Federal Land Banks, Federal Intermediate Credit Banks, and Banks for Cooperatives. At the local level, there are Federal Land Bank Associations and Production Credit Associations.
 - 1) Federal Land Banks. There are over 500 farmer-owned local associations. Loans are made for long terms ranging from 10 to 40 years.
 - 2) Production Credit Associations. Provide financing for seasonal production, living expenses, and capital purchases up to seven years. In order to tailor a seasonal loan to the borrower's budget, PCA's often use a line of credit, allowing the borrower to draw on a set amount of available money. Purchase of stock is a condition of the loan.
- D. Farmers Home Administration. You must be unable to obtain adequate credit from other sources to be eligible for FmHA loans. FmHA makes operating loans up to seven years. Farm ownership loans may exceed 10 years. Upward limits are often imposed.
- E. Commodity Credit Corporation. The CCC is not a lending agency, but makes price-supporting loans on certain stored farm products.

NONINSTITUTIONAL LENDERS

- A. Individuals. Nearly 65% of the farmland sold today is owner-financed. Lower down payments and interest rates make this type of finance appealing. Increasing payments are often included in the loan.
- B. Dealers. Dealers are often involved in financing machinery, equipment, feed and fertilizer. Be sure to check interest rates as they may be considerably higher.

APPENDIX G

HANDOUT; PRESENTING YOURSELF AS A BORROWER

PRESENTING YOURSELF AS A BORROWER

Introduction

Today more than ever, the need to properly present yourself and your farming operation to a potential lender is the key to obtaining a loan.

The fact that lenders are tightening up available credit, emphasizes the need for a proper impression.

The following information is designed to familiarize you with some common areas lenders look at in determining whether or not to approve a loan.

What a Lender Looks for in a Borrower

1. The Individual - a lender prefers a borrower who has established a solid reputation for responsibility and personal integrity. In a farm loan situation, they are particularly interested in your ability as a farmer. It is a good idea to make available to the lender personal references.
2. Financial Position and Farm Progress - the borrower is often asked to present a Net Worth Statement showing the difference between total assets owned and debts owed. This statement shows an itemized list of land, livestock, equipment and other assets as well as a detailed list of all debts. Many times, previous years' Net Worth Statements are requested in order to determine whether or not there is growth occurring.
3. Repayment Capacity - this is the area which is receiving more consideration in deciding the fate of a loan application. Lenders will carefully check on farm organization and operation. Budgeting and Cash Flow statements are critical areas of a review. If you are unable to determine where you will obtain repayment money, you are unlikely to be approved.
4. Purpose of the Loan - careful consideration is given to the intent of the loan. Loans are much more likely to be approved if earnings can be increased as a direct result of the loan. A loan for a new combine will generally not be made if there is no need for the machine.
5. Collateral - offering collateral as a term of borrowing allows the lender to secure the loan. This assurance of being repaid will often enable you to borrow greater amounts on better terms.

What a Borrower Should Look for in a Lender

A basic understanding of what types of lenders are available is necessary before borrowing.

Obtain information about services offered by each institution and select the lender which is best suited to your needs.

There are four characteristics you should consider in selecting a lender.

1. Ability and Character- it is important to be able to create a good working relationship with your creditor. Ask people in the community if you are unfamiliar with a particular lender.
2. Lending Policies- policies vary greatly among lenders. Be sure to check out differences in forms used. There may be some "hidden" costs involved. If you are unsure, consult an attorney.
3. Dependability- if you wish to establish a long-term working relationship with a particular lender, make sure they share a similar dedication. While most banks and savings and loans are insured, private lenders may not be. Ask about dependability if you are concerned.
4. Experience- some creditors may have very limited experience in lending. It may be to your advantage to patronize well-established, knowledgeable lenders.

APPENDIX H
FOLLOW UP LETTER



**Department of Adult
and Occupational Education**

College of Education
Bluemont Hall 363
Manhattan, Kansas 66506
913-532-5535

April 20, 1984

Dear Agricultural Education Student Teacher:

Last week you received a packet of material concerning an ongoing study of a curriculum unit dealing with banking and finance. You were asked to either teach from a prepared unit (experimental treatment) or develop your own lesson from a set of specific lesson objectives (control treatment).

I hope you have already taught or are planning to teach your particular lesson. In order to properly evaluate the new unit, full participation from both groups is needed.

Enclosed you will find all necessary forms needed to complete the study. Both student and instructor forms have been condensed in order to speed up the testing procedure. Specific instructions are included.

The deadline for completing the study is Friday April 27. If you experience any difficulties in completing the assignment, please contact me at the Ag Education office (913) 532-5904. Thanks again for your cooperation.

Sincerely yours,

A handwritten signature in cursive script that reads "William R. Yoakum".

William R. Yoakum
Graduate Teaching Assistant

Enclosures

GROUP TEACHER INSTRUCTION SHEET FOR COMPLETING STUDY

This is the final part of the project, which involves testing how well students know the material presented to them. This unit exam should take no longer than 15-20 minutes for the class to complete.

The exam consists of two parts; a multiple-choice exam and a section on unit perceptions. These two parts were originally labeled forms 1 & 2. However, as I mentioned in the cover letter, they have been condensed.

It is your job as the instructor to make all necessary copies of the exam for students who were present at the time you originally taught the lesson. Only those students should take the exam.

Please stress to your class the need to be honest and straightforward in all responses. Please take this time to also thank them for their active participation in the study. Following the completion of the exam, their part in the project will be over.

As the instructor, you will need to complete Form 3 and if you were a part of the experimental group, you will complete the enclosed Form 4.

You will find specific instructions below. I would like to take this opportunity to personally thank each of you for participating in this study. I realize that this occurred at a busy time of the year, and your help is deeply appreciated. Thanks again.

PROCEDURE:

After teaching your unit you should:

1. Hand out and briefly review the exam instructions. Point out that section two will not be scored.
2. Have students complete the unit exam. (You may grade the first ten questions of the exam, but are not required to do so.)
3. Complete instructor's Form 3. (both experimental and control)
4. Complete instructor's Form 4. (experimental group only)
5. Return all student exams and instructor's forms to:
(Use the self-addressed stamped envelope if at all possible.)

William R. Yoakum
Ag Education
342 Bluemont Hall
Kansas State University
Manhattan, KS 66506

APPENDIX I
INSTRUCTOR FORMS THREE AND FOUR

INSTRUCTOR FORM 3 & 4Form 3 (For completion by both group instructors)

Name: _____

Cooperating Teacher: _____

Student Teaching Center: _____

High School Size (circle one): 0-50 51-100 100-300 300-500 500+

(detach here if control group)

Form 4 (Experimental instructors only)

The next six items are designed to allow you to express your perceptions of the unit. The format is similar to that in the student exam section II. To the right of each statement there are five possible responses which correspond to the heading directly above them. Place a check (✓) in the proper blank. Thank you for your cooperation.

	STRONGLY DISAGREE	DISAGREE	UNDECIDED	AGREE	STRONGLY AGREE
1. The unit was well constructed and understandable.	_____	_____	_____	_____	_____
2. The unit was easy to teach.	_____	_____	_____	_____	_____
3. The unit was complete.	_____	_____	_____	_____	_____
4. The unit contained too much information for a one-day lesson.	_____	_____	_____	_____	_____
5. The material in the unit was too difficult for students.	_____	_____	_____	_____	_____
6. I would like to participate in other studies similar to this project in the future.	_____	_____	_____	_____	_____

Please feel free to comment on any part of the unit below. Suggest changes etc.

APPENDIX J
ACHIEVEMENT AND ATTITUDE INSTRUMENTS

Unit Exam

Name: _____

School Grade Classification (circle one): Freshman Sophomore Junior Senior

Years enrolled in Vo Ag (circle one): 0 1 2 3 4

Gender (circle one): Male Female

Age: ____ years

Section I. Multiple Choice

Instructions: Each of the following statements is followed by four possible answers. Read each statement and answer carefully. Select the best answer, even though there may be more than one that appears to be correct. Choose the one which is most complete in answering the question or completing the statement. Draw an "X" through the letter to the left of the statement that corresponds to the selected answer.

- a b c d 1. An example of a noninstitutional lender is: (a) an insurance company; (b) a commercial bank; (c) a feed and fertilizer dealer; (d) Farmers Home Administration.
- a b c d 2. A common source of short-term credit is: (a) Commodity Credit Corporation; (b) Federal Land Bank; (c) Insurance Companies; (d) Commercial Bank.
- a b c d 3. Loans which are "last resorts" often are granted by: (a) Farm Credit Systems; (b) Insurance Companies; (c) Farmers Home Administration; (d) Commercial Banks.
- a b c d 4. The factor receiving more attention from lenders before approving a loan is: (a) collateral; (b) repayment capacity; (c) purpose of the loan; (d) the particular individual.
- a b c d 5. When a lender asks you to present a Net Worth Statement prior to approving your loan, they are probably interested in: (a) financial position and progress; (b) the character of the borrower; (c) the purpose of the loan; (d) where repayment funds will come from.
- a b c d 6. The best rule to use in deciding when to borrow money is: (a) borrow if you can pay off the loan in one year or less; (b) borrow when the interest rate is relatively low; (c) borrow if you can use the loan to make additional money; (d) borrow only as a last resort.
- a b c d 7. The Farm Credit System is composed of The Federal Land Banks, Production Credit Associations and: (a) Farmers Home Administration; (b) Banks for Cooperatives; (c) local bankers and dealers; (d) Commodity Credit Corporation.

- a b c d 8. Long-term loans are generally used for: (a) purchase of livestock; (b) purchase of feed and fertilizer; (c) real estate purchases; (d) machinery purchases.
- a b c d 9. Very flexible loan arrangements with lower interest rates are often made by: (a) commercial banks; (b) individuals; (c) insurance companies; (d) Farm Credit System.

Section II. Perceptions of the unit.

Instructions: The following section is a part of the unit exam but will not be used in calculating your test score. Please take time to complete each item below.

The next six statements are designed to allow you to express your perceptions of the unit on banking and credit. To the right of each statement there are five possible responses which correspond to the heading directly above them. Place a check (✓) in the proper blank. There are no right or wrong answers.

	STRONGLY DISAGREE	DISAGREE	UNDECIDED	AGREE	STRONGLY AGREE
11. I will be able to apply the information I have learned in this unit.	_____	_____	_____	_____	_____
12. I have already been able to use some of the information learned in the unit.	_____	_____	_____	_____	_____
13. The material in this unit was interesting.	_____	_____	_____	_____	_____
14. The material in this unit has caused me to think and reason.	_____	_____	_____	_____	_____
15. This unit has taught me a good deal of new material.	_____	_____	_____	_____	_____
16. I liked the manner in which this unit was taught.	_____	_____	_____	_____	_____

EXPERIMENTAL EVALUATION OF AN INSTRUCTIONAL UNIT
ON AGRICULTURAL BANKING AND SOURCES OF FARM CREDIT

BY

WILLIAM R. YOAKUM

B.S., Kansas State University, 1983

AN ABSTRACT OF A THESIS

submitted in partial fulfillment of the

requirements for the degree

MASTER OF SCIENCE

Department of Adult and Occupational Education

KANSAS STATE UNIVERSITY
Manhattan, Kansas

1984

Statement of the Problem

This study sought to evaluate the effectiveness of an instructional unit, developed by the researcher, in comparison with traditional instruction methods. Effectiveness was evaluated by comparing treatment group student achievement and attitude scores.

Method

The population consisted of 19 Agricultural Education student teachers (instructors) from Kansas State University. A total of 104 students participated.

A posttest only control group design was used with intact classes randomly assigned to either experimental or control treatment groups. Experimental group instructors were asked to teach the subject matter using the approach suggested in the instructional unit. Control group instructors were given a set of specific objectives and were instructed to teach the subject using materials available to them.

Scores from posttest achievement and attitude instruments were compared for differences between the treatment group. Correlations existing between student and instructor characteristics as they related with student achievement and attitude were also analyzed. Both students and instructors completed demographic information sheets prior to posttesting.

A one-way analysis of variance was utilized to evaluate differences in the independent variable (access to the prepared unit) as it affected student achievement and attitude. In addition, a Pearson product-moment correlation comparison was used to detect significant relationships existing with student achievement and attitudes. Both tests analyzed data at the .05 level of significance.

Results

Comparisons made between the treatment groups' achievement and attitude scores showed no significant differences between the groups receiving prepared unit instruction and those receiving instruction in a traditional manner.

No significant relationships were found to exist between selected student and instructor characteristics and the level of student achievement. Significant, direct correlations were found to exist between instructors' hours of agri-business instruction, students' grade level, students' years of vocational agriculture instruction and the level of student attitude concerning the prepared unit. Instructors' perceptions were generally favorable toward the prepared unit.

Conclusions

Two major conclusions were drawn from the findings. The first conclusion was that the use of the prepared unit did not significantly increase student knowledge of the subject matter. The second conclusion derived was that the use of the prepared instructional unit did not significantly increase student attitude toward the subject matter.